



**UNPUBLISHED PRELIMINARY DATA**  
**NAVAL AIR ENGINEERING CENTER**  
**AERONAUTICAL ENGINE LABORATORY**  
PHILADELPHIA, PA. 19112

IN REPLY REFER TO:

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18 Mar 1965

National Aeronautics and Space Administration  
Office of Grants and Research Contracts  
Code SC  
Washington, D.C. 20546

Gentlemen:

**N65-82950**  
*Cale Done*  
*NASA CRD 57446*

The following is the Quarterly Status Report No. 3 (1 April 1965) for Phase II of NASA Defense Purchase Request R-105.

Detailed design concepts for the turbomachinery containment evaluation facility (Aeronautical Engine Laboratory Containment Evaluation Facility - AELCEF) have been prepared. The M&T Company, Engineers and Contractors, has been contracted to formalize these design concepts and prepare drawings suitable for construction and manufacturing purposes. Purchase orders for the high-speed photographic camera and air turbine drive motors to be used in the AELCEF have been prepared and forwarded to the Naval Air Engineering Center Purchasing Department. Both the camera and air turbine motors were found to be "sole source" items—i.e., manufactured and marketed by a particular company. The items selected for use were:

- a. The Beckman and Whitely Model 350 Dynafax camera
- b. The Barbour-Stockwell Models 1131 and 4146-HD Vertical Drive Turbines and associated lubrication and viscous damping equipment

This equipment is expected at the Aeronautical Engine Laboratory in mid-May.

A study of structural reaction to impulsive loading has been initiated to determine the specimen instrumentation and facility control system requirements. The review of available reports on turbomachinery failures and literature concerning engine reliability, burst test research, and energy absorption containment systems is continuing.

The Turbine Disk Burst Protection Study, Phase I, report will be published by 1 April 1965.

Very truly yours,

*J. R. Hawvermale*  
J. R. HAWVERMALE,  
Commander, USN

Director, Aeronautical Engine Laboratory  
By direction of the Commanding Officer

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